

What Is Claimed Is:

1. A flexible telescoping electromagnetic tool comprising:
an end cap formed of a magnetizable material; an end section formed of a non-
5 magnetizable material, said end cap being connected to said end section;
a tubular section formed of a non-magnetizable material, said tubular section
slidably receiving said end section; and

an electrically conducting insert disposed through said tubular section and through said
10 end section, said conducting insert electrically connected to an end plug power supply
and switch module at a distal end of said tubular section, said module attached to the
distal end of said non-magnetizable tubular section.
2. An electromagnetic tool according to claim 1, wherein said end section is slidable
15 through an opening in said tubular section, the electromagnetic tool further comprising a
ring insert secured to an end of said end section, said ring insert being formed of a plastic
material and having a width that is greater than a diameter of said opening, said ring
insert being attached outside a proximal end of said end section inside said tubular
section and wherein said electrically conducting insert comprises electrical connection
20 with an inductor, said inductor having two contacts and being near said end cap.
3. An electromagnetic tool according to claim 2, wherein said electrically conducting
insert is disposed in said tubular section.
- 25 4. An electromagnetic tool according to claim 3, wherein said conducting insert is
disposed against a portion of an inside wall of said tubular section.

5. An electromagnetic tool according to claim 4, wherein said conducting insert is comprised of first and second electrically isolated conductors, the first conductor being connected to one contact of said inductor contacts and the second conductor being connected to another contact of said inductor.
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6. An electromagnetic tool according to claim 2, wherein said electrical contacts are galvanic contacts.
7. An electromagnetic tool according to claim 2, wherein magnetization of said end cap is achieved with electrical inductance via said inductor.
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8. An electromagnetic tool according to claim 2, further comprising at least one subsequent tubular section formed of a non-conducting material, said at least one subsequent tubular section slidably receiving one of said tubular section and other subsequent tubular sections.
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9. An electromagnetic tool according to claim 2, further comprising a compact electromagnetic tool selectively securable to a magnetizable object.
10. An electromagnetic tool according to claim 9, wherein said end section includes a first part having a reduced width substantially corresponding to a diameter of said tubular section and a second part having a width greater than the diameter of said tubular section.
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11. An electromagnetic tool according to claim 8, further comprising an end tube at the distal end of said tubular section, said end tube has a width substantially corresponding to a diameter of said tubular section, the electromagnetic tool further comprising a power
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supply and switch module secured to said end tube, said module being electrically connected via said electrically conducting insert to said inductor, said module having two conducting contacts connected to said electrically conducting insert, said module having a width that is substantially equal to the diameter of said tubular section, wherein
5 said end plug of said insert is in electrical contact with said stop cap.

12. An electromagnetic tool according to claim 8, wherein said compact electromagnetic tool comprises a plastic coated helix coil.

10 13. An electromagnetic tool according to claim 1, further comprising a compact electromagnetic tool having an electrical switch at the distal end of a subsequent tube section, said electrical switch being springingly supported at the distal end of said subsequent tube section.

15 14. An electromagnetic tool according to claim 12, wherein said subsequent tube section includes a first section having a reduced width substantially corresponding to a diameter of said tubular section and a second section having a width greater than the diameter of said tubular section.

20 15. An electromagnetic tool according to claim 12, wherein said subsequent tube section has a width substantially corresponding to a diameter of said tubular section, the electromagnetic tool further comprising a switch member secured to said module, a portion of said switch member being formed of a conducting material located inside said module and another portion of said switch member having a width that is less than the
25 diameter of said subsequent tube section, wherein actuation of the switch connected to said module forms an electrical contact of said power supply with said inductor.

16. An electromagnetic tool according to claim 14, wherein said non-conducting material is plastic.

17. An electromagnetic tool according to claim 1, wherein said module is covered with a
5 non-conducting material.

18. An electromagnetic tool according to claim 1 wherein said end cap is a tip of a selected shape having non-contact portions, the tool further comprising a covering means for partially covering said tip, said covering means magnetically shielding non-contact
10 portions of said tip.

19. A method of constructing a flexible telescoping electromagnetic tool including an end section with a tip formed of a conducting material, a tubular section formed of a non-conducting material, and a conducting insert disposed in the tubular section
15 in electrical contact with the end section, the conducting insert having an inductor means at a distal end for magnetizing said tip, the method comprising:

- (a) inserting the end section into an opening in the tubular section;
- 20 (b) securing an end cap having a width greater than the opening to an end of the end section, the end cap having a magnetizable portion surrounded by said inductor inside the end section;
- (c) inserting the conducting insert inside the non-conducting tubular section in
25 electrical contact with the end cap and securing the inductor to the conducting insert with the end plug;

(d) inserting the tubular section into a compact electromagnetic tool in a friction fit, the compact electromagnetic tool supporting the tubular section and the end section to an apparatus requiring the electromagnetic tool;

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(e) securing the tubular section to a subsequent tubular section;

20. A flexible telescoping electromagnetic tool comprising:

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an end section formed of a conducting material;

a tubular section formed of a non-conducting material, said tubular section slidably receiving said end section; and

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a conducting insert disposed in said tubular section in electrical contact with said end cap regardless of a position of said end section along said conducting insert, said conducting insert having a power supply module at a distal end thereof, said module connected to said conducting insert, said conducting insert
20 extending through said non-conducting tubular section.